

Research Note

Gastrointestinal Nematodes of Two Australian Skinks, *Ctenotus regius* and *Ctenotus schomburgkii* (Sauria: Scincidae)

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ABSTRACT: Two species of Australian skinks, *Ctenotus regius* and *Ctenotus schomburgkii*, were examined for gastrointestinal helminths. *Abbreviata* sp. were found in connective tissue cysts on the outer surface of the stomach and small intestines of both species (73% prevalence in *C. regius*; 87% prevalence in *C. schomburgkii*). *Maxvachonia chabaudi* was found in *C. regius*; *Skrjabinelazia* sp. was found in *C. schomburgkii*. All findings represent new host records.

KEY WORDS: Nematoda, *Abbreviata* sp., *Maxvachonia chabaudi*, *Skrjabinelazia* sp., Sauria, Scincidae, *Ctenotus regius*, *Ctenotus schomburgkii*, Australia.

The genus *Ctenotus* contains 79 species of skinks that occur only in Australia, except for a single species, *Ctenotus spaldingi*, which occurs in Australia and New Guinea (Cogger, 1992). To our knowledge, the only report on the gastrointestinal helminths of lizards in this genus was by Mawson (1972), who examined *Ctenotus leae* and *Ctenotus labillardieri*. The purpose of our paper is to report the nematodes of 2 additional *Ctenotus* species, *Ctenotus regius* Storr, 1971, and *Ctenotus schomburgkii* (Peters, 1863). *Ctenotus regius* occurs in areas with sparse ground cover in central and eastern South Australia to western New South Wales, southwestern Queensland, and the southern Northern Territory; *Ctenotus schomburgkii* is found on sandy soils in association with arid scrubs and is widely distributed throughout the southern half of Western Australia, through South Australia and the southern Northern Territory, to central western New South Wales (Cogger, 1992).

Specimens from the herpetology collection of the South Australian Museum collected in South Australia at 100–300 m elevation in 1992 and 1993 were examined: 15 *C. regius*, 6 females, 9 males (\bar{x} snout–vent length [SVL] = 65 ± 3.6 SD, range 57–71 mm), 15 *C. schomburgkii*, 2 females, 13 males (\bar{x} SVL = 42 ± 2.9 SD, range 37–47 mm). All specimens were adults. Museum numbers and localities are given in the Appen-

dix. While *C. regius* and *C. schomburgkii* are sympatric in parts of their ranges (Cogger, 1992), our samples were not sympatric. Lizards were originally preserved in 10% formalin and stored in 95% ethanol. Selected intact nematodes were placed in vials of 70% ethanol and deposited in the USNM Helminthological Collection, USDA, Beltsville, Maryland 20705 (for accession numbers, see the Appendix). Terminology use is in accordance with Margolis et al. (1982).

The body was opened by a longitudinal incision from throat to vent and the gastrointestinal tract was removed by cutting across the anterior esophagus and rectum. The esophagus, stomach, small intestine, and large intestine were examined separately under a dissecting microscope. Nematodes were removed and identified using the standard glycerol wet mount procedure.

Two female *Maxvachonia chabaudi* Mawson, 1972, were found in the small intestine of 1 female (SVL = 68 mm) *C. regius*. One immature female *Skrjabinelazia* sp. was found in the small intestine of 1 male (SVL = 43 mm) *C. schomburgkii*. Encysted larvae of *Abbreviata* sp. were found in the serosa of the stomach and/or small intestine in 11 of 15 *C. regius* (73% prevalence, 6.9 ± 5.6 SD \bar{x} intensity, range 1–18; 50% prevalence females, 89% prevalence males) and in 13 of 15 *C. schomburgkii* (87% prevalence, 8.9 ± 9.2 SD \bar{x} intensity, range 1–34; 100% prevalence females, 85% prevalence males). *Ctenotus regius* infected with *Abbreviata* sp. averaged 66 mm SVL, range 63–71; *C. schomburgkii* averaged 46 mm SVL, range 37–47. No correlation was found between the number of *Abbreviata* sp. present and SVL for either *C. regius* or *C. schomburgkii* (correlation coefficient 0.49 and 0.30, respectively). All are new host records.

Maxvachonia chabaudi has previously been reported from the genus *Ctenotus*, namely, *C. leae* from Eyre Peninsula, South Australia, and

C. labillardieri from Pemberton, Western Australia (Mawson, 1972). No nominal species of *Skrjabinelazia* has so far been recorded from Australian hosts; in the only other report, Angel and Mawson (1968) recorded *Skrjabinelazia* sp. in the gecko *Christinus marmoratus* from Adelaide and Pearson Island, South Australia.

Species of *Abbreviata* are common parasites of mammals and reptiles but do not occur in birds (Morgan, 1946). Baker (1987) listed 58 species of *Abbreviata* known to infect reptiles. Of these, 15 (26%) are known from Australian lizards.

Roca (1993) suggested that the importance of lizards as prey can be ascertained by the prevalence of larval helminths in the lizard population; that is, prevalence of encysted larval nematodes in a lizard population indicates their degree of importance as prey because these lizards serve as intermediate hosts. Because these larvae were encysted and in relatively high prevalences, we believe the skinks to be intermediate hosts. The definitive hosts for the *Abbreviata* sp. recovered from *C. regius* and *C. schomburgkii* are likely carnivorous mammals or reptiles that feed on these skinks. One possibility might be the feral cat, *Felis catus*, which feeds on *C. regius* in south-eastern Australia (Jones and Coman, 1981). Another conceivable definitive host might be varanid lizards, which also feed on *Ctenotus* sp. (Shine, 1986; James et al., 1992). More work will be required to elucidate the life cycle of these encysted *Abbreviata*.

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Appendix: South Australia Museum Catalog Numbers, Locality Data, and USNM Helminthological Collection Numbers

Ctenotus regius: SAMA R40452, 26°21'S, 135°15'E; R40502, 30°04'S, 138°17'E; R40597, 29°27'S, 134°12'E; R40789, 31°23'S, 137°03'E; R40888, 34°03'S, 139°11'E; R41274, 33°50'S, 140°56'E; R41603, 33°34'S, 139°58'E; R41786, 33°27'S, 140°19'E; R42114, 28°25'S, 136°01'E; R42322, 30°36'S, 139°32'E; R42327, 30°38'S, 139°32'E; R42501, 29°01'S, 133°16'E; R42537, 29°01'S, 133°25'E; R42540, 29°01'S, 133°25'E; 42585, 28°12'S, 133°24'E. USNM Helminthological Collection numbers: *Abbreviata* sp. 83979; *Maxvachonia chabaudi* 83978.

Ctenotus schomburgkii: SAMA R41356, 33°46'S, 139°48'E; R41402, 33°35'S, 140°40'E; R41469, 33°57'S, 139°54'E; R41475, 33°54'S, 140°12'E; R41571–41572, 41578, 33°09'S, 140°05'E; R41696, 32°38'S, 140°45'E; R41708, 32°57'S, 140°47'E; R41766, 32°49'S, 140°08'E; R42352, 30°38'S, 139°32'E; R42502, 29°01'S, 133°16'E; R42517–42518, 29°03'S, 133°19'E; R42579, 28°12'S, 133°23'E. USNM Helminthological Collection numbers: *Abbreviata* sp. 83981; *Skrjabinelazia* sp. 83980.